

ABSTRACT OF THE INVENTION

A novel and improved polymeric coating composition and method for applying adherent film coatings to metallic substrates is provided wherein a finely divided or powdered coating material, such as ceramic powders, carbon powders or metallic particles, is substantially uniformly dispersed within a polymeric binder comprising a host polymer and a suitable bonding promoter. The use of a bonding promoter allows a significant amount of cross-linking to occur in situ after the coating composition has been applied to the metallic substrate thereby achieving good adherence between the coating and the substrate and improving the robustness of the coating. The host polymer is preferably a copolymer of poly(vinylidene-fluoride)-hexafluoropropylene copolymers and the bonding promoter is preferably a material selected from the group Bis(trimethoxysilylpropyl)amine, hepta(decafluoro-1,1,2,2-tetrahydrodecyl)triethoxy silane, bis[3-(trimethoxysilylpropyl)]ethylenediamine, or N-(2-aminoethyl)3-aminopropyl-triethoxysilane.